

SEQUENCE LISTING

<110> KIRIN BEER KABUSHIKI KAISHA
MIKAYAMA, Toshifumi
YOSHIDA, Hitoshi
FORCE, Walker, R.
CHEN, Xingjie
TAKAHASHI, Nobuaki

<120> ANTI CD40 MONOCLONAL ANTIBODY

<130> 021286-0306473

<140> To be assigned

<141> Herewith

<150> PCT/US01/13672

<151> 2001-04-27

<150> US09/844,684

<151> 2001-04-27

<150> JP2001/142482

<151> 2001-05-11

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<151> 2001-10-05

<150> US10/040,244

<151> 2001-10-26

<160> 66

<170> PatentIn Ver. 2.1

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<210> 13
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<210> 24
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<210> 28

<211> 474

<212> PRT

<213> Homo sapiens

<400> 28

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Met Ser Val Ser Phe Leu Ile Phe Leu Pro Val Leu Gly Leu Pro Trp
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Gly Val Leu Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val
          20                   25                   30

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Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser
          35                   40                   45

```

```

Val Ser Ser Asn Ser Ala Thr Trp Asn Trp Ile Arg Gln Ser Pro Ser
          50                   55                   60

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Arg Asp Leu Glu Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr
          65                   70                   75                   80

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```

Arg Asp Tyr Val Gly Ser Val Lys Ser Arg Ile Ile Ile Asn Pro Asp
          85                   90                   95

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Thr Ser Asn Asn Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu
          100                   105                   110

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Asp Thr Ala Ile Tyr Tyr Cys Thr Arg Ala Gln Trp Leu Gly Gly Asp
115 120 125

Tyr Pro Tyr Tyr Tyr Ser Met Asp Val Trp Gly Gln Gly Thr Thr Val
130 135 140

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
145 150 155 160

Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu
165 170 175

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
180 185 190

Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser
195 200 205

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe
210 215 220

Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr
225 230 235 240

Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro
245 250 255

Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
260 265 270

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
275 280 285

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp
290 295 300

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
305 310 315 320

Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val
325 330 335

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
 340 345 350

Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly
 355 360 365

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
 370 375 380

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
 385 390 395 400

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
 405 410 415

Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe
 420 425 430

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
 435 440 445

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
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Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 465 470

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<211> 406

<212> DNA

<213> Homo sapiens

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 gtctttgtct ccaggggaaa gagccaccct ctctgcagg gccagtcaga gtgttagcag 180
 ctacttagcc tggtaccaac agaaacctgg ccaggctccc aggctcctca tctatgatgc 240
 atccaacagg gccactggca tcccagccag gttcagtggc agtgggtctg ggacagactt 300
 cactctcacc atcagcagcc tagagcctga agattttgca gtttattact gtcagcagcg 360
 tagcaacact ttcggccctg ggaccaaagt ggatatcaaa cgtacg 406

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 <211> 126
 <212> PRT
 <213> Homo sapiens

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 1 5 10 15
 Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
 20 25 30
 Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
 35 40 45
 Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
 50 55 60
 Arg Leu Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala
 65 70 75 80
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 85 90 95
 Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser
 100 105 110
 Asn Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr
 115 120 125

<210> 31
 <211> 508
 <212> DNA
 <213> Homo sapiens

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 cagtgtgaag tgcagctggt ggagtcctgg ggaggcttgg tacagcctgg caggtccttg 180
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caagctccag ggaagggcct ggagtgggtc tcaggtatta gttggaatag tggtagcttg 300
 gtgcatgcgg actctgtgaa gggccgattc accatctcca gagacaacgc caagaactcc 360
 ctgtatctgc aaatgaacag tctgagagct gaggacacgg ccttgtatta ctgtgcaaga 420
 gataggctat ttcggggagt taggtactac ggtatggacg tctggggcca agggaccacg 480
 gtcaccgtct cctcagctag caccaagg 508

<210> 32

<211> 146

<212> PRT

<213> Homo sapiens

<400> 32

Met Glu Leu Gly Leu Ser Trp Ile Phe Leu Leu Ala Ile Leu Lys Gly
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Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
 20 25 30

Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45

Asp Asp Tyr Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60

Glu Trp Val Ser Gly Ile Ser Trp Asn Ser Gly Ser Leu Val His Ala
 65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn
 85 90 95

Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu
 100 105 110

Tyr Tyr Cys Ala Arg Asp Arg Leu Phe Arg Gly Val Arg Tyr Tyr Gly
 115 120 125

Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser
 130 135 140

Thr Lys
 145

<210> 33
<211> 414
<212> DNA
<213> Homo sapiens

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tctttgtctc caggggaaag agccaccctc tcctgcaggg ccagtcagag tgtagcagc 180
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actctacca tcagcagcct agagcctgaa gattttgcag tttattactg tcagcagcgt 360
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<210> 34
<211> 129
<212> PRT
<213> Homo sapiens

<400> 34
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Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
20 25 30
Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
35 40 45
Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
50 55 60
Arg Leu Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala
65 70 75 80
Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85 90 95
Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser
100 105 110
16/39

His Trp Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr
 115 120 125

Val

<210> 35
 <211> 493
 <212> DNA
 <213> Homo sapiens

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 aatgaacag cctgagagcc gaggacacgg ctgtgtatta ctgtgcgaga gagggctaca 420
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 ctagcaccaa ggg 493

<210> 36
 <211> 144
 <212> PRT
 <213> Homo sapiens

<400> 36
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 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
 20 25 30
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60

Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Ile Lys Tyr Tyr Ala
65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
100 105 110

Tyr Tyr Cys Ala Arg Glu Gly Tyr Asn Ile Leu Thr Gly Tyr Phe Gly
115 120 125

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys
130 135 140

<210> 37

<211> 427

<212> DNA

<213> Homo sapiens

<400> 37

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tgggacagat ttcaactctca ccatcagctg cctgcagtct gaagattttg caacttatta 360
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<210> 38

<211> 131

<212> PRT

<213> Homo sapiens

<400> 38

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
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20 25 30

Leu Ser Ala Ser Thr Gly Asp Arg Val Thr Ile Ser Cys Arg Met Ser
35 40 45

Gln Gly Ile Ser Ser Asp Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys
50 55 60

Ala Pro Glu Leu Leu Ile Ser Ala Ala Ser Thr Leu Gln Ser Gly Val
65 70 75 80

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
85 90 95

Ile Ser Cys Leu Gln Ser Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
100 105 110

Tyr Tyr Ser Phe Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
115 120 125

Lys Arg Thr
130

<210> 39

<211> 492

<212> DNA

<213> Homo sapiens

<400> 39

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ctagcaccaa gg 492

<210> 40
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 <213> Homo sapiens

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 20 25 30
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60
 Glu Trp Val Ala Val Ile Trp Asn Asp Gly Ser Ile Lys Tyr Tyr Ala
 65 70 75 80
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
 85 90 95
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Arg Glu Gly Tyr Asn Ile Leu Thr Gly Tyr Phe Gly
 115 120 125
 Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys
 130 135 140

<210> 41
 <211> 427
 <212> DNA
 <213> Homo sapiens

<400> 41
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acgtacg 427

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<210> 42

<211> 131

<212> PRT

<213> Homo sapiens

<400> 42

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Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
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Leu Pro Gly Ala Arg Cys Val Ile Trp Met Thr Gln Ser Pro Ser Leu
          20              25              30

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```

Leu Ser Ala Ser Thr Gly Asp Arg Val Thr Ile Ser Cys Arg Met Ser
          35              40              45

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```

Gln Gly Ile Ser Ser Asp Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys
          50              55              60

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Ala Pro Glu Leu Leu Ile Ser Ala Ala Ser Thr Leu Gln Ser Gly Val
          65              70              75              80

```

```

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
          85              90              95

```

```

Ile Ser Cys Leu Gln Ser Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
          100              105              110

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Tyr Tyr Ser Phe Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
          115              120              125

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Lys Arg Thr
          130

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<210> 43
 <211> 481
 <212> DNA
 <213> Homo sapiens

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 caggagtcgg gccaggact ggtgaagcct tcggagaccc tgtccctcac ctgcactgtc 180
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 gtgaccgctg cggacacggc cgtgtattac tgtgcgagag ccccttgca cggtgactac 420
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<210> 44
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 44
 Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
 1 5 10 15
 Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys
 20 25 30
 Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile
 35 40 45
 Ser Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu
 50 55 60
 Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro
 65 70 75 80
 Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln
 85 90 95

Phe Ser Leu Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr
100 105 110

Tyr Cys Ala Arg Ala Pro Leu His Gly Asp Tyr Lys Trp Phe His Pro
115 120 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys
130 135 140

<210> 45

<211> 430

<212> DNA

<213> Homo sapiens

<400> 45

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tccaggcacc ctgtctttgt ctccagggga aagagccacc ctctcctgca gggccagtca 180
gagtgttagc agcagctact tagcctggta ccagcagaaa cctggccagg ctcccaggct 240
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gtctgggaca gacttcactc tcaccatcag cagactggag cctgaagatt ttgcagtgt 360
ttactgtcag cagtatggta gctcaccgat caccttcggc caagggaacac gactggagat 420
caaacgtacg 430

<210> 46

<211> 130

<212> PRT

<213> Homo sapiens

<400> 46

Met Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
1 5 10 15

Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser
20 25 30

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
35 40 45

Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala
50 55 60

Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro
65 70 75 80

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
85 90 95

Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr
100 105 110

Gly Ser Ser Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
115 120 125

Arg Thr
130

<210> 47

<211> 462

<212> DNA

<213> Homo sapiens

<400> 47

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ggactactga agccttcgga gaccctgtcc ctcacctgca ctgtctctgg cggtccatc 180
agcagtcctg gttactacgg gggctggatc cgccagcccc cagggaaggg gctggagtgg 240
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accatatccg tagacacgtc caagaaccag ttctccctga agctgagctc tgtgaccgcc 360
gcagacacgg ctgtgtatta ctgtacgaga cctgtagtac gatattttgg gtgggttcgac 420
ccctggggcc aggggaaccct ggtcaccgtc tcctcagcta gc 462

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<210> 48
<211> 149
<212> PRT
<213> Homo sapiens

<400> 48

Met	Asp	Leu	Met	Cys	Lys	Lys	Met	Lys	His	Leu	Trp	Phe	Phe	Leu	Leu
1				5					10					15	
Leu	Val	Ala	Ala	Pro	Arg	Trp	Val	Leu	Ser	Gln	Leu	Gln	Leu	Gln	Glu
			20					25					30		
Ser	Gly	Pro	Gly	Leu	Leu	Lys	Pro	Ser	Glu	Thr	Leu	Ser	Leu	Thr	Cys
		35					40					45			
Thr	Val	Ser	Gly	Gly	Ser	Ile	Ser	Ser	Pro	Gly	Tyr	Tyr	Gly	Gly	Trp
	50					55					60				
Ile	Arg	Gln	Pro	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile	Gly	Ser	Ile	Tyr
65					70					75					80
Lys	Ser	Gly	Ser	Thr	Tyr	His	Asn	Pro	Ser	Leu	Lys	Ser	Arg	Val	Thr
				85					90					95	
Ile	Ser	Val	Asp	Thr	Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser
			100					105					110		
Val	Thr	Ala	Ala	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Thr	Arg	Pro	Val	Val
		115					120					125			
Arg	Tyr	Phe	Gly	Trp	Phe	Asp	Pro	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr
	130					135					140				
Val	Ser	Ser	Ala	Ser											
145															

<210> 49
 <211> 448
 <212> DNA
 <213> Homo sapiens

<400> 49
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 atgtgccatc cagttgaccc agtctccatc ctccctgtct gcatctgtag gagacagagt 180
 caccatcact tgccgggcaa gtcagggcac tagcagtgtt ttagcctggg atcagcagaa 240
 accagggaaa gctcctaagc tcctgatcta tgatgcctcc aatttgaaa gtgggggtccc 300
 atcaagggtc agcggcagtg gatctggggac agatttcact ctcaccatca gcagcctgca 360
 gcctgaagat ttgcaactt attactgtca acagtttaat agttaccgga cgttcggcca 420
 agggaccaag gtggaaatca aacgtacg 448

<210> 50
 <211> 130
 <212> PRT
 <213> Homo sapiens

<400> 50
 Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
 1 5 10 15
 Leu Pro Gly Ala Arg Cys Ala Ile Gln Leu Thr Gln Ser Pro Ser Ser
 20 25 30
 Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser
 35 40 45
 Gln Gly Ile Ser Ser Ala Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys
 50 55 60
 Ala Pro Lys Leu Leu Ile Tyr Asp Ala Ser Asn Leu Glu Ser Gly Val
 65 70 75 80
 Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
 85 90 95

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
100 105 110

Phe Asn Ser Tyr Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
115 120 125

Arg Thr
130

<210> 51
<211> 453
<212> DNA
<213> Homo sapiens

<400> 51
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acctgtgcca tctccgggga cagtgtctct agcaacagtg ctgcttgga ctggatcagg 180
cagtccccat cgagaggcct tgagtggctg ggaaggacat actacaggtc caagtgggtat 240
aaagattatg cagtatctgt gaaaagtcga ataaccatca acccagacac atccaagaac 300
cagttctccc tgcagctgaa ctctgtgacc cccgaggaca cggctgtgta ttactgtgca 360
agaggggtatt actatgggtc ggggagctat ccctactact accaaatgga cgtctggggc 420
caagggacca cggtcaccgt ctcctcagct agc 453

<210> 52
<211> 151
<212> PRT
<213> Homo sapiens

<400> 52
Met Ser Val Ser Phe Leu Ile Phe Leu Pro Val Leu Gly Leu Pro Trp
1 5 10 15
Gly Val Leu Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val
20 25 30
Lys Pro Ser Gln Thr Leu Ser Phe Thr Cys Ala Ile Ser Gly Asp Ser
35 40 45

Val Ser Ser Asn Ser Ala Ala Trp Asn Trp Ile Arg Gln Ser Pro Ser
50 55 60

Arg Gly Leu Glu Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr
65 70 75 80

Lys Asp Tyr Ala Val Ser Val Lys Ser Arg Ile Thr Ile Asn Pro Asp
85 90 95

Thr Ser Lys Asn Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu
100 105 110

Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Tyr Tyr Tyr Gly Ser Gly
115 120 125

Ser Tyr Pro Tyr Tyr Tyr Gln Met Asp Val Trp Gly Gln Gly Thr Thr
130 135 140

Val Thr Val Ser Ser Ala Ser
145 150

<210> 53

<211> 414

<212> DNA

<213> Homo sapiens

<400> 53

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agccaccctg tctttgtctc caggggaaag tgccaccctc tcctgcaggg ccagtcagag 180
tgtttagcagc tacttagcct ggtaccaaca gaaacctggc caggctccca ggctcctcat 240
ctatgatgca tccaacaggg ccactggcat cccagccagg ttcagtggca gtgggtctgg 300
gacagacttc actctcacca tcagcagcct agagcctgaa gattttgcag tttattactg 360
tcagcagcgt agcaacactt tcggcgaggagg gaccaaggtg gagatcaaac gaac 414

<210> 54
 <211> 125
 <212> PRT
 <213> Homo sapiens

<400> 54
 Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
 1 5 10 15
 Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
 20 25 30
 Leu Ser Pro Gly Glu Ser Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
 35 40 45
 Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
 50 55 60
 Arg Leu Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala
 65 70 75 80
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
 85 90 95
 Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser
 100 105 110
 Asn Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg
 115 120 125

<210> 55
 <211> 495
 <212> DNA
 <213> Homo sapiens

<400> 55
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 atctgggtct gaggtaaga agcctggggc ctcagtgaag gtcccctgca aggtttctgg 180
 atacaccttc actagctatg ctatgaattg ggtgcgacag gccccctggac aagggttga 240

gtggatggga tggatcaaca ccaacactgg gaacccaacg tatgcccagg gcttcacagg 300
acggtttgtc ttctccttgg acacctctgt cagcacggca tatctgcaga tcagcagcct 360
aaaggctgag gacactgccg tgtattactg tgcgagagag gtagtaccag ttgctatgag 420
ggtaactcac tactactacg gtatggacgt ctggggccaa gggaccacgg tcaccgtctc 480
ctcagctagc accaa 495

<210> 56
<211> 149
<212> PRT
<213> Homo sapiens

<400> 56

Met	Asp	Trp	Thr	Trp	Arg	Ile	Leu	Phe	Leu	Val	Ala	Ala	Ala	Thr	Gly
1				5					10					15	
Ala	His	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ser	Glu	Leu	Lys	Lys
			20					25					30		
Pro	Gly	Ala	Ser	Val	Lys	Val	Pro	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe
		35					40					45			
Thr	Ser	Tyr	Ala	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu
	50					55					60				
Glu	Trp	Met	Gly	Trp	Ile	Asn	Thr	Asn	Thr	Gly	Asn	Pro	Thr	Tyr	Ala
65					70					75					80
Gln	Gly	Phe	Thr	Gly	Arg	Phe	Val	Phe	Ser	Leu	Asp	Thr	Ser	Val	Ser
			85						90					95	
Thr	Ala	Tyr	Leu	Gln	Ile	Ser	Ser	Leu	Lys	Ala	Glu	Asp	Thr	Ala	Val
			100					105					110		
Tyr	Tyr	Cys	Ala	Arg	Glu	Val	Val	Pro	Val	Ala	Met	Arg	Val	Thr	His
		115					120					125			
Tyr	Tyr	Tyr	Gly	Met	Asp	Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val
		130					135					140			

Ser Ser Ala Ser Thr
145

<210> 57
<211> 830
<212> DNA
<213> Homo sapiens

<400> 57
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gcacaggatc cgtggcctcc tatgagctga ctcagccacc ctcagtgtcc gtggccccag 180
gacagacagc cagcatcacc tgttctggag ataaattggg ggataatttt acttgctggt 240
atcagcagaa gccaggccag tcccctgtgc tggatcatctt tcaggattgg aagcggcgcc 300
cagggatccc tgcgcgattc tctggctcca agtctgggaa cacagccact ctgaccatca 360
gcgggaccca ggctatggat gaggctgact attactgtca ggcgtgggac atcagcactg 420
tggtattcgg cggagggacc aagctgaccg tcctaggtca gccaaggct gccccctcgg 480
tcactctgtt cccgccctcc tctgaggagc ttcaagccaa caaggccaca ctggtgtgtc 540
tcataagtga cttctacccg ggagccgtga cagtggcctg gaaggcagat agcagccccg 600
tcaaggcggg agtggagacc accacaccct ccaaacaaag caacaacaag tacgcggcca 660
gcagctacct gagcctgacg cctgagcagt ggaagtccca cagaagctac agctgccagg 720
tcacgcatga agggagcacc gtggagaaga cagtggcccc tacagaatgt tcatgaattc 780
agatccgtta acggttacca actacctaga ctggattcgt gaccaacata 830

<210> 58
<211> 231
<212> PRT
<213> Homo sapiens

<400> 58
Met Ala Trp Ile Pro Leu Phe Leu Gly Val Leu Val Tyr Cys Thr Gly
1 5 10 15
Ser Val Ala Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ala
20 25 30
Pro Gly Gln Thr Ala Ser Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp
35 40 45

Asn	Phe	Thr	Cys	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Val	Leu	50	55	60	
Val	Ile	Phe	Gln	Asp	Trp	Lys	Arg	Arg	Pro	Gly	Ile	Pro	Ala	Arg	Phe	65	70	75	80
Ser	Gly	Ser	Lys	Ser	Gly	Asn	Thr	Ala	Thr	Leu	Thr	Ile	Ser	Gly	Thr	85	90	95	
Gln	Ala	Met	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gln	Ala	Trp	Asp	Ile	Ser	100	105	110	
Thr	Val	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Gln	Pro	115	120	125	
Lys	Ala	Ala	Pro	Ser	Val	Thr	Leu	Phe	Pro	Pro	Ser	Ser	Glu	Glu	Leu	130	135	140	
Gln	Ala	Asn	Lys	Ala	Thr	Leu	Val	Cys	Leu	Ile	Ser	Asp	Phe	Tyr	Pro	145	150	155	160
Gly	Ala	Val	Thr	Val	Ala	Trp	Lys	Ala	Asp	Ser	Ser	Pro	Val	Lys	Ala	165	170	175	
Gly	Val	Glu	Thr	Thr	Thr	Pro	Ser	Lys	Gln	Ser	Asn	Asn	Lys	Tyr	Ala	180	185	190	
Ala	Ser	Ser	Tyr	Leu	Ser	Leu	Thr	Pro	Glu	Gln	Trp	Lys	Ser	His	Arg	195	200	205	
Ser	Tyr	Ser	Cys	Gln	Val	Thr	His	Glu	Gly	Ser	Thr	Val	Glu	Lys	Thr	210	215	220	
Val	Ala	Pro	Thr	Glu	Cys	Ser										225	230		

<210> 59
 <211> 520
 <212> DNA
 <213> Homo sapiens

<400> 59
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 agttcagcct ggggggtccc tgagactctc ctgtgcagtc tctggattca ccttcagtac 180
 ctactggatg cactgggtcc gccaaagctcc agggaagggg ctggtgtggg tctcacgtat 240
 taatagtgat gggagtagca caacctacgc ggactccgtg aagggccgat tcaccatctc 300
 cagagacaac gccaagaaca cgctgtatct gcaaatgaac agtctgagag ccgaggacac 360
 ggctgtgtat tactgtgcaa gagatagagt actatggatc ggggagttat cctactacgg 420
 tatggacgtc tggggccaag ggaccacggt caccgtctcc tcagctagca ccaagggcc 480
 atcggtcttc cccctggcac cctcctccaa gagcacctct 520

<210> 60
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 60
 Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Lys Gly
 1 5 10 15
 Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
 20 25 30
 Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Val Ser Gly Phe Thr Phe
 35 40 45
 Ser Thr Tyr Trp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60
 Val Trp Val Ser Arg Ile Asn Ser Asp Gly Ser Ser Thr Thr Tyr Ala
 65 70 75 80
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn
 85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
100 105 110

Tyr Tyr Cys Ala Arg Asp Arg Val Leu Trp Ile Gly Glu Leu Ser Tyr
115 120 125

Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130 135 140

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
145 150 155 160

Ser Thr Ser

<210> 61

<211> 698

<212> DNA

<213> Homo sapiens

<400> 61

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ggggagtcag acccagtcag gacacagcat ggacatgagg gtccccgctc agtcctctggg 60
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caccctgtct gcattctgtag gagacagagt caccatcact tgccgggcca gtcagagtat 180
tagtaactgg ttggcctggg atcagcagaa accagggaaa gcccctaagc tcctgctcta 240
taaggcatct ggtttagaaa gtgggggtccc atcaaggttc agcggcagtg gatctgggac 300
agaattcact ctcaccatca acagcctgca gcctgatgat ttgcaactt attactgcca 360
acagtcta atgtattcgt ggacgttcgg ccacgggacc aaggtggaaa tcaaacgtac 420
gggtggctgca ccattctgtc tcattctccc gccattctgat gagcagttga aatctggaac 480
tgcctctgtt gtgtgcctgc tgaataactt ctatcccaga gaggccaaag tacagtggaa 540
gggtggataac gccctccaat cgggtaactc ccaggagagt gtcacagagc aggacagcaa 600
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caaagtctac gcctgcgaag tcaccatca gggcctga 698

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<210> 62
 <211> 223
 <212> PRT
 <213> Homo sapiens

<400> 62

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
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Leu Pro Gly Ala Lys Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Thr
 20 25 30

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser
 35 40 45

Gln Ser Ile Ser Asn Trp Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys
 50 55 60

Ala Pro Lys Leu Leu Leu Tyr Lys Ala Ser Gly Leu Glu Ser Gly Val
 65 70 75 80

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr
 85 90 95

Ile Asn Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
 100 105 110

Ser Asn Ser Tyr Ser Trp Thr Phe Gly His Gly Thr Lys Val Glu Ile
 115 120 125

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
 130 135 140

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
 145 150 155 160

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
 165 170 175

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
 180 185 190

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
 195 200 205

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu
 210 215 220

<210> 63
 <211> 630
 <212> DNA
 <213> Homo sapiens

<400> 63
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 ttttagcagct atgccatgag ctgggtccgc caggctccag ggaaggggct ggagtgggtc 300
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 ggggtactttg actactgggg ccagggaacc ctggtcaccg tctcctcagc tagcaccaag 540
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 ctgggctgcc tgggtcaagga ctacttcccc 630

<210> 64
 <211> 177
 <212> PRT
 <213> Homo sapiens

<400> 64
 Met Glu Phe Gly Leu Ser Trp Leu Phe Leu Val Ala Ile Leu Lys Gly
 1 5 10 15
 Val Gln Cys Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln
 20 25 30
 Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45

Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala
65 70 75 80

Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
85 90 95

Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
100 105 110

Tyr Tyr Cys Ala Lys Asp Gly Gly Tyr Tyr Gly Ser Gly Ser Tyr Gly
115 120 125

Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala
130 135 140

Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser
145 150 155 160

Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
165 170 175

Pro

<210> 65

<211> 728

<212> DNA

<213> Homo sapiens

<400> 65

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atgcgacatc cagatgaccc agtctccatc ttccgtgtct ggatctgtag gagacagagt 180
caccatcact tgtcggggcga gtcagggtat tagcagctgg ttagcctggg atcagcagaa 240
accagggaaa gccctaaagc tctgatcta tgctggatcc agtttgcaaa gtgggggtccc 300
atcaaggttc agcggcagtg gatttgggac agatttcact ctcaccatca gcagcctgca 360
gcctgaagat tttgcaactt actattgtca acaggctagc agtttcctc ggacattcgg 420

```

ccaagggacc aaggtggaga tcaaacgtac ggtggctgca ccatctgtct tcattttccc 480
gccatctgat gagcagttga aatctggaac tgcctctgtt gtgtgcctgc tgaataactt 540
ctatcccaga gaggccaaag tacagtggaa ggtggataac gccctccaat cgggtaactc 600
ccaggagagt gtcacagagc aggacagcaa ggacagcacc tacagcctca gcagcacctt 660
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gggcctga
728

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<210> 66

<211> 223

<212> PRT

<213> Homo sapiens

<400> 66

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Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
 1              5              10              15

```

```

Phe Pro Gly Ser Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
      20              25              30

```

```

Val Ser Gly Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser
      35              40              45

```

```

Gln Gly Ile Ser Ser Trp Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys
      50              55              60

```

```

Ala Pro Lys Leu Leu Ile Tyr Ala Gly Ser Ser Leu Gln Ser Gly Val
      65              70              75              80

```

```

Pro Ser Arg Phe Ser Gly Ser Gly Phe Gly Thr Asp Phe Thr Leu Thr
      85              90              95

```

```

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
      100             105             110

```

```

Ala Ser Ser Phe Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
      115             120             125

```

```

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
      130             135             140

```

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
145 150 155 160

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
165 170 175

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
180 185 190

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
195 200 205

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu
210 215 220